

WHAT IS CLAIMED IS:

1. A device for updating the function of a monitor, comprising:

USB signal lines for transmitting a recording command and recorded data;

a detecting device electrically coupled to the USB signal lines for detecting and

outputting the recording command and the recorded data;

a starting device electrically coupled to the detecting device for receiving the recording command and the recorded data and then transmitting the recording command and the recorded data when the starting device is switched from a visual path to a recording path;

a ROM recording command decoder for converting the recording command into a erase/read/write signal and the recorded data into a address signal and a data signal by switching the starting device to the recording path;

a ROM electrically connected to the ROM recording command decoder, of which data can be updated according to the address signal, the data signal and the erase/read/write signal; and

a recovery device electrically coupled to the ROM recording command decoder and the starting device for determining whether the data stored in the ROM are already updated according the address signal, the data signal and the read/write signal and for switching the starting device from the recording path to the visual path when the data of the ROM are already updated.

2. The device for updating the function of a monitor as claimed in claim 1, wherein the USB signal is electrically coupled to a recording device for transmitting the recording command and the recorded data.

3. The device for updating the function of a monitor as claimed in claim 2,

wherein the recording device is a computer stage for transmitting the recording command and the recorded data through a USB in a form of USB.

4. The device for updating the function of a monitor as claimed in claim 2, wherein the recording device is a USB interface circuit stage for transmitting the recording command and the recorded data in a form of USB.

5. The device for updating the function of a monitor as claimed in claim 1, wherein the detecting device comprises:

a USB multi-address checking circuit electrically coupled to the USB signal lines for checking a serial setting commands of the recorded data and then transmitting a setting signal when the checked serial setting commands are correct; and

a monitor in-system programming (MISP) flag electrically coupled to the USB multi-address checking circuit for transmitting a monitor in-system programming starting signal according to the setting signal.

6. The device for updating the function of a monitor as claimed in claim 1, wherein the starting device comprises:

a monitor in-system programming reset generating circuit for generating a selecting signal according to the monitor in-system programming starting signal; and

a recording path separator switched from the visual path to the recording path according to the selecting signal and transmitting the recording command and the recorded data via the recording path.

7. The device for updating the function of a monitor as claimed in claim 1, wherein the ROM recording command decoding device comprises:

a USB interface circuit for receiving and converting the recording command and the recorded data; and

a recording command decoder for receiving the converted recording command and the recording data and transmitting the address signal, the data signal and the erase/read/write signal.

8. The device for updating the function of a monitor as claimed in claim 7, wherein the recording command decoder comprises:

a hidden ROM for storing the program codes of the recording command;

a RAM for storing the recording data;

a CPU electrically coupled to the hidden ROM, the RAM and the USB interface circuit for receiving the USB interface circuit-converted recording command and recorded data, storing the recorded data in the RAM, decoding the recording command according to the program code of the hidden ROM and then sending the decoded recording command; and

a recording control recorder electrically coupled to the CPU for receiving the decoded recording command and converting the decoded recording command into an erase/read/write signal and sending the recorded data stored in the RAM according to the address signal and the data signal.

9. The device for updating the function of a monitor as claimed in claim 7, wherein the function of the recording command decoder can be achieved by a hardware circuit which can divide the recording command received by the USB circuit into a plurality of states to perform the function of decoding and convert the recording command and the recorded data into the erase/read/write signal, the address signal and the data signal.

10. The device for updating the function of a monitor as claimed in claim 1, wherein the recovery device further comprises:

a recovery control recorder for receiving the address signal, the data signal and the erase/read/write signal and transmitting a recovery signal after recording is achieved; and

a recovery reset circuit electrically coupled to the recovery control recorder and the starting device for transmitting a monitor in-system programming stop signal to switch the starting device from the recording path to the visual path when receiving the recovery signal.

11. The device for updating the function of a monitor as claimed in claim 1, wherein the ROM is a flash ROM.

12. The device for updating the function of a monitor as claimed in claim 1, wherein the ROM is an electrically erasable programmable read only memory.

13. A system for updating the function of a monitor, comprising:
a recording device for storing and outputting a recording command and recorded data;

USB signal lines electrically coupled to the recording device for transmitting the recording command and the recorded data; and

a monitor controller having a monitor in-system programming memory, electrically coupled to the USB signal lines, for modifying the monitor controller according to the recording command and the recorded data.

14. The system for updating the function of a monitor as claim in claim 13, wherein the recording device is a computer stage for transmitting the recording command and the recorded data in a form of USB via a USB connector.

15. The system for updating the function of a monitor as claimed in claim 13, the recording device is a USB interface circuit stage for transmitting the recording

command and the recorded data in a form of USB.

16. The system for updating the function of a monitor as claimed in claim 13, wherein the monitor controller further comprises:

a detecting device electrically coupled to the USB signal lines for detecting and outputting the recording command and the recorded data;

a starting device electrically coupled to the detecting device for receiving the recording command and the recorded data and then transmitting the recording command and the recorded data when the starting device is switched from a visual path to a recording path;

a ROM recording command decoder for converting the recording command into a erase/read/write signal and the recorded data into a address signal and a data signal by switching the starting device to the recording path;

a ROM electrically connected to the ROM recording command decoder, of which data can be updated according to the address signal, the data signal and the erase/read/write signal; and

a recovery device electrically coupled to the ROM recording command decoder and the starting device for determining whether the data stored in the ROM are already updated according the address signal, the data signal and the read/write signal and for switching the starting device from the recording path to the visual path when the data of the ROM are already updated.

17. The system for updating the function of a monitor as claimed in claim 16, wherein the detecting device further comprises:

a USB multi-address checking circuit electrically coupled to the USB signal lines for checking a serial setting commands of the recorded data and then transmitting a

setting signal when the checked serial setting commands are correct; and

a monitor in-system programming (MISP) flag electrically coupled to the USB multi-address checking circuit for setting the monitor to a monitor in-system programming control mode according to the setting signal and transmitting a monitor in-system programming starting signal.

18. The system for updating the function of a monitor as claimed in claim 16, wherein the starting device further comprises:

a monitor in-system programming reset generating circuit for generating a selecting signal according to the monitor in-system programming starting signal; and

a recording path separator switched from the visual path to the recording path according to the selecting signal and transmitting the recording command and the recorded data via the recording path.

19. The system for updating the function of a monitor as claimed in claim 16, wherein the ROM recording command decoding device comprises:

a USB interface circuit for receiving and converting the recording command and the recorded data; and

a recording command decoder for receiving the converted recording command and the recording data and transmitting the address signal, the data signal and the erase/read/write signal.

20. The system for updating the function of a monitor as claimed in claim 19, wherein the recording command decoder comprises:

a hidden ROM for storing the program codes of the recording command;

a RAM for storing the recording data;

a CPU electrically coupled to the hidden ROM, the RAM and the USB interface

circuit for receiving the USB interface circuit-converted recording command and recorded data, storing the recorded data in the RAM, decoding the recording command according to the program code of the hidden ROM and then sending the decoded recording command; and

5 a recording control recorder electrically coupled to the CPU for receiving the decoded recording command and converting the decoded recording command into an erase/read/write signal and sending the recorded data stored in the RAM according to the address signal and the data signal.

10 21. The system for updating the function of a monitor as claimed in claim 19, wherein the function of the recording command decoder can be achieved by a hardware circuit which can divide the recording command received by the USB circuit into a plurality of states to perform the function of decoding and convert the recording command and the recorded data into the erase/read/write signal, the address signal and the data signal.

15 22. The system for updating the function of a monitor as claimed in claim 16, wherein the recovery device further comprises:

a recovery control recorder for receiving the address signal, the data signal and the erase/read/write signal and transmitting a recovery signal after recording is achieved; and

20 a recovery reset circuit electrically coupled to the recovery control recorder and the starting device for transmitting a monitor in-system programming stop signal to switch the starting device from the recording path to the visual path when receiving the recovery signal.

23. The system for updating the function of a monitor as claimed in claim 16,

wherein the ROM is a flash ROM.

24. The system for updating the function of a monitor as claimed in claim 16, wherein the ROM is an electrically erasable programmable read only memory.

25. A method for updating the function of a monitor, comprising the steps of:

5 (a) performing a USB multi-setting command check to determine whether the signals on the USB signal lines are correct?

(b) setting the monitor into a monitor in-system programming mode?

(c) reading and determining a recording command; and

10 (d) reading recorded data and writing the recorded data in a memory and performing step (c) when the recording command is a write command;

(e) performing step (a) when the recording command is in a non-monitor in-system programming mode.

26. The method for updating the function of a monitor as claimed in claim 25, wherein step (a) is performed only when the monitor operates abnormally.

15 27. The method for updating the function of a monitor as claimed in claim 25, wherein the monitor is in a normal visual transmission mode when the checked signals on the USB signal lines are incorrect.

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